

REMARKS / ARGUMENTS

Claims 9-13 remain pending in this application. Claims 1-8 have been canceled without prejudice or disclaimer. New claims 9-13 have been added.

Priority

Applicants appreciate the Examiner's acknowledgment of the claim for priority and safe receipt of the priority document.

35 U.S.C. §102

Claims 1-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bhat et al (U.S. Pub. No. 2005/0032985). These rejections are traversed as follows.

The present invention is directed to a semiconductor optical device mounting structure having a semiconductor laser device and a mounting plate on which a second electrode is formed. The semiconductor laser device itself includes an active layer, a clad layer, a surface dielectric film, a first electrode and an electrode protection dielectric film as claimed. The surface dielectric film is removed at a top surface of an active region of the semiconductor laser device. This surface dielectric film is further selectively removed so that the area above the active region remains coated. The semiconductor laser device is mounted on the mounting plate in

junction down form by mounting the first electrode of the semiconductor laser device on the second electrode of the mounting plate by using solder metal.

As shown by example in an embodiment of the present invention, a surface dielectric film 107 is removed at a top surface of an active region of the semiconductor laser device, such as region 199 shown in Fig. 2. Meanwhile, the electrode protection dielectric film 109 is selectively removed so that an area above the active region remains coated although the entire active region 103 is not coated. The area corresponding to a light emitting region is coated (see Fig. 2 and specification, page 9, line 8 to page 10, line 10). As shown in Fig. 3, the exposed portion of the electrode 108 comes into contact with solder 112 when the device is mounted. This exposed area is remote from the top surface region of the active region. The electrode 108 is electrically in contact with the laser device at region 199.

This structure prevents a reaction between the solder metal and the electrode region (top region of the active region) of the device. As such, any reaction between the solder metal and the electrode 108 does not adversely influence the semiconductor laser device.

On the other hand, Bhat et al disclose a multi-chip semiconductor LED assembly, including several LEDs mounted on a shared submount and coupled to circuitry formed on the submount. Bhat et al disclose the use of a patterned dielectric passivation layer 42 provided on the LED die which "acts as an electrical

isolation layer between the p and n electrodes and is required since the solder layers 41 extend across both p and n electrodes" (see [0065], lines 12-18).

On the other hand, the electrode protection dielectric film of the presently claimed invention covers a selected top surface region of an active region such that an area of the electrode that is bonded to the solder metal is distant from this top surface region. As such, it is submitted that the pending claims patentably define the present invention over the cited art.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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